

**SD57045-01**

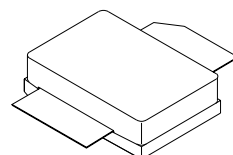
## RF & MICROWAVE TRANSISTORS N-Channel Enhancement-Mode Lateral MOSFETs

**TARGET DATA**

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 45$  W PEP with 13 dB gain @ 945 MHz
- BeO FREE PACKAGE

**DESCRIPTION**

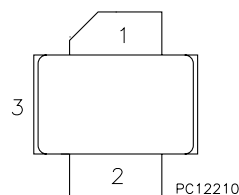
The SD57045-01 is a common source N-Channel enhancement-mode lateral Field-Effect RF power transistor designed for broadband commercial and industrial applications at frequencies up to 1.0 GHz. The SD57045-01 is designed for high gain and broadband performance operating in common source mode at 28V. It is ideal for base stations applications requiring high linearity.



**.230 2LFLANGELESS (M250)**  
epoxy sealed

**ORDER CODE**  
SD57045-01

**BRANDING**  
SD57045-01

**PIN CONNECTION**

1. Drain      3. Source  
2. Gate

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$ )

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain Source Voltage	65	V
$V_{DGR}$	Drain-Gate Voltage ( $R_{GS} = 1M\Omega$ )	65	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current	5	A
$P_{DISS}$	Power Dissipation (@ $T_c = 70^{\circ}C$ )	TBD	W
$T_j$	Max. Operating Junction Temperature	200	$^{\circ}C$
$T_{STG}$	Storage Temperature	-65 to 200	$^{\circ}C$

**THERMAL DATA**

$R_{th(j-c)}$	Junction-Case Thermal Resistance	TBD	$^{\circ}C/W$
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**ELECTRICAL SPECIFICATION** ( $T_{\text{case}} = 25\text{ }^{\circ}\text{C}$ )**STATIC**

Symbol	Parameter			Min.	Typ.	Max.	Unit
$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$I_{\text{DS}} = 1\text{ mA}$		65			V
$I_{\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$				1	$\mu\text{A}$
$I_{\text{GSS}}$	$V_{\text{GS}} = 20\text{V}$	$V_{\text{DS}} = 0\text{ V}$				1	$\mu\text{A}$
$V_{\text{GS(Q)}}$	$V_{\text{DS}} = 28\text{V}$	$I_{\text{D}} = 250\text{ mA}$		2.5		5.0	V
$V_{\text{DS(ON)}}$	$V_{\text{GS}} = 10\text{V}$	$I_{\text{D}} = 3\text{ A}$			0.7		V
$G_{\text{FS}}$	$V_{\text{DS}} = 10\text{V}$	$I_{\text{D}} = 5\text{ A}$			2.7		mho
$C_{\text{ISS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		80		pF
$C_{\text{OSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		40		pF
$C_{\text{RSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{ V}$	$f = 1\text{ MHz}$		3.2		pF

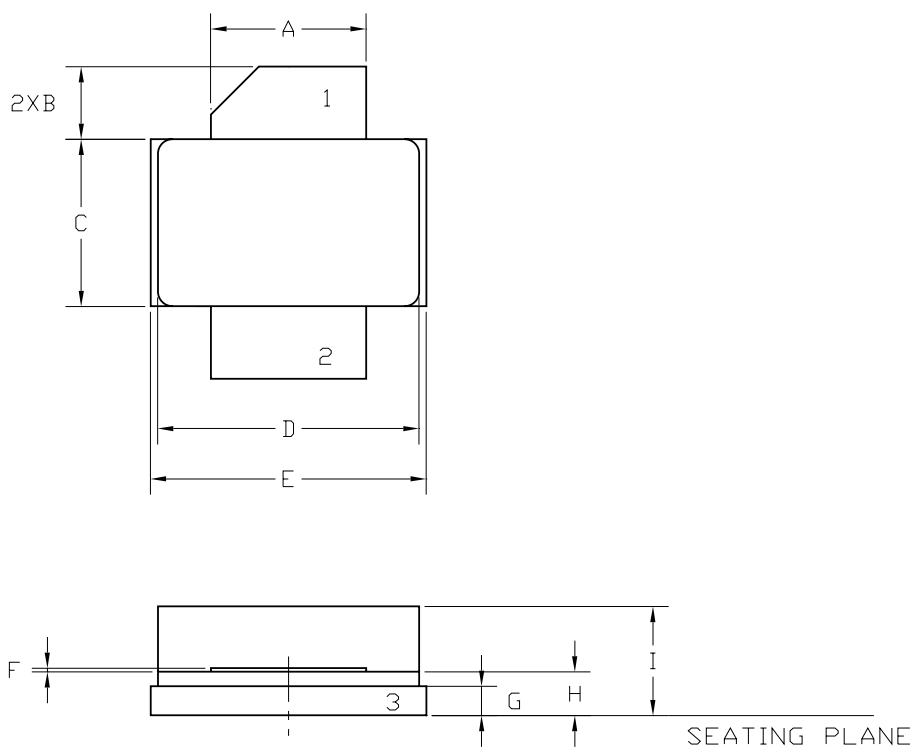
**DYNAMIC**

Symbol	Parameter			Min.	Typ.	Max.	Unit
$P_{\text{OUT}}$	$f = 945\text{ MHz}$	$V_{\text{DD}} = 28\text{V}$	$I_{\text{DQ}} = 250\text{ mA}$	45			W
$\text{IMD}_3$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$		-32	-28	dBc
$G_{\text{PS}}$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$	13	15		dB
$\eta_{\text{D}}$	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W PEP}$	$I_{\text{DQ}} = 250\text{ mA}$	33	40		%
Load Mismatch	$f = 945\text{ MHz}$ ALL PHASE ANGLES	$V_{\text{DD}} = 28\text{ V}$	$P_{\text{out}} = 45\text{ W}$ $I_{\text{DQ}} = 250\text{ mA}$	5:1			VSWR

Note:  $f_1 = 945.0\text{ MHz}$   
 $f_2 = 945.1\text{ MHz}$

### M250 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	5.21		5.71	0.205		0.225
B	2.16		2.92	0.085		0.115
C	5.59		6.09	0.220		0.240
D	8.89		9.40	0.350		0.370
E	9.40		9.91	0.370		0.390
F	0.11		0.15	0.004		0.006
G	0.89		1.14	0.035		0.045
H	1.45		1.70	0.057		0.067
I	2.67		3.94	0.105		0.155



Controlling Dimension: Inches

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